**IT Applications Unit 3, AOS 2, Organisations and Data Management**

**Developing a RDMS, p 113-119**

**In creating the database the following is carried out:**

Creating the tables and relationships

Setting up the queries

Input forms

Creating macros

**Testing the solution, p 115**

1. Why is testing carried out?

Testing is carried out to ensure that all the features and functions work correctly and the information is produced free of errors.

1. Distinguish between informal and formal testing.

Informal testing is done during the development stages. The developer constantly tests the solution as they are working on it to make sure everything functions as expected. Formal testing is done after the solution has been finished to ensure that it solves the problem. It is formalised with comprehensive documentation of each test and its outcome.

1. Formal testing:
   1. Bench Test
      1. What does a bench test entail?

The bench test forms part of the formal testing in which sample data is used to determine how the solution behaves with a range of data. Data is chosen to check that calculations are being performed correctly, and how incorrect data is handled by the validation techniques.

* 1. Describe User acceptance testing.

User acceptance testing involves asking the users to follow a series of steps to complete a task in the solution or interpreting the information contained in the output, then providing feedback to the developers.

1. Testing validation
   1. Testing should test the boundaries of the validation rule. What does this mean?

Testing the boundaries of the validation rule means deliberately supplying data to the validation rule that will incur an error to make sure the validation rule picks up on it. For example, if the rule is set to a range of 5 – 10, the values 4 and 11 would be deliberately entered to ensure the rule determines they are incorrect.

1. Testing the query

When a data set is entered into a database, queries can be used to single out specific data sets. The queries can be checked to make sure they are functioning correctly by examining the expected results from the list of all records and ensuring the list matches up with the one presented by the query. When more than one criterion is used in the query, it must also be ensured that while a record may meet one criterion, it will not be displayed unless it meets the entire specified criterion. Formulas in queries must also be tested.

1. Testing formulas

Formulas need to be tested regardless of where they are found. This can be done simply by using test data that is easy to manually calculate and checking that the formula comes up with the same answer.

1. During which stage of the PSM does testing take place?

Testing takes place during the development stage and once the solution is finished.

1. Why is testing performed during this stage?

Testing is performed at both of these stages because while the solution is being developed the different aspects (formulas, scripts, queries, etc.) need to be constantly checked to make sure they are functioning as expected. Formal testing must also be done after the solution has been created to ensure it solves the problem. This testing must be formally documented and thoroughly test all aspects of the solution.